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(54) **Refrigerator with dispenser for cans or bottles of drinks or beverages in general**

(57) A refrigerator (1) comprises a cabinet (2) in which at least one preservation compartment (4) is provided, and a door (3) hinged to said cabinet (2) and arranged to close said compartment (4), said door (3) comprising a door liner (5) arranged to face said compartment (4) and further comprising at least one tray (8) for supporting food and a plurality of support elements (10) for said tray (8) which enable it to be positioned at different heights on said door liner (5). In this latter there is positioned a member (11) acting as a dispenser for drink or beverage containers (12) which is open at opposing ends (at 13A and 34) and is arranged to contain drink cans or bottles (12), said member (11) lowerly comprising a shelf (33) for supporting one of said containers (12) in such a manner as to enable it to be gripped by a user.

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Description

[0001] This invention relates to a refrigerator in accordance with the introduction to the main claim.

[0002] A refrigerator door liner is known to comprise several trays for supporting foods or their containers. Bottles, cans or other drink or beverage containers can also be stored on these trays. However on account of their shape and size, these containers occupy considerable space on the trays (at the expense of foods) and are often in unstable equilibrium, because of which they may fall on opening the door. Such containers are sometimes held on the usual shelves of the refrigerator preservation compartment or on trays associated with these shelves. However in this case such containers occupy space which could be used in another manner and in particular may not lie securely on these shelves because their shape and size may be such that they are able to move about thereon as they are not retained by appropriate elements.

[0003] An object of the invention is to provide an improved refrigerator in which the generally (but not necessarily) small drink or beverage cans or bottles can be stored securely and be easily removed by the user.

[0004] A further object is to provide a refrigerator of the aforesaid type the structure of which is such that it can be produced without industrial modification to known refrigerator production systems.

[0005] These and further objects which will be apparent to the expert of the art are attained by a refrigerator in accordance with the accompanying claims.

[0006] The invention will be better understood from the accompanying drawing, which is provided by way of non-limiting example and on which:

Figure 1 is an open-door front view of a refrigerator constructed in accordance with the invention and comprising a dispenser for drink containers;

Figure 2 is a perspective exploded view of the dispenser associated with the refrigerator of Figure 1;

Figure 3 is a front view of a portion of the dispenser of Figure 2; and

Figure 4 is a partial perspective view of the door liner of the refrigerator of Figure 1.

[0007] With reference to said figures, a refrigerator is indicated overall by 1 and comprises a cabinet 2 carrying a door 3 which closes a known food preservation compartment 4. The door 3 comprises a door liner 5 which when the door is closed is positioned in front of the compartment 4. On the door liner 5 there are a plurality of trays 8 for supporting foods or food containers. These trays are supported by support elements 10 provided at different heights on the door liner 5.

[0008] According to the invention, a dispenser 11 for drink or beverage cans or bottles 12 is associated with the door liner 5 and is positioned on the elements 10 to the side of the trays 8. The dispenser 11 comprises a housing 13 defining a compartment or vessel for containing said containers 12 (which hereinafter are indicated for simplicity as "cans"), and having lateral fins 14 arranged to cooperate with the support elements 10 in such a manner as to be supported by them. These fins project from side walls 15 (from which stiffening elements 19 also project) connected together by a wall 16 which, when the housing 13 is mounted on the door liner, is substantially parallel to this latter. This interconnecting wall 16 has a longitudinal window 17 provided in a part 18 recessed towards the interior of the housing 13.

[0009] Internally, the wall 16 comprises parallel spaced-apart guides 20 closed lowerly by a wall 21 and arranged to receive the edges 22 of an element 23 able to support the cans 12 spaced apart and without them rattling. This element consists of a body 24, from a wall 25 of which there project a plurality of flexible fins 26 constructed of soft material, such as rubber, as is preferably the entire element 23. These fins are associated with a central raised portion 27 of the wall 25. On the opposite wall 29, the body 24 comprises lateral elements 30, between which a longitudinal window 31 is provided in a position corresponding with said portion 27. When the dispenser 11 is assembled, this window lies in a position corresponding with the window 17 in the housing 13, to give visual access to the dispenser.

[0010] The housing 13 is open upperly at 13A (with reference to the figures), having for most of its length a substantially U cross-section. This housing lowerly comprises a part 33 acting as a support member for a can to be withdrawn from the dispenser 11 by the user via an aperture 34 provided in the wall 16, at the bottom of the housing 13. A covering element 35, preferably of a soft material (for example rubber), on which the can rests before being withdrawn from the dispenser 11, is provided on the wall 33 substantially perpendicular to the wall 16 and perpendicular to the side walls 15. The element 35 comprises a plurality of pins 37 to be inserted into seats 38 provided in the wall 33, to secure it to this wall.

[0011] When the dispenser 11 has been assembled, it is positioned on the elements 10 of the door liner 5 in place of trays present on it. This dispenser is hence a totally independent refrigerator element in terms of its marketing, enabling the user to equip his own refrigerator with the dispenser after the refrigerator has been acquired. The cans are placed in the dispenser by dropping them through the aperture 13A in the housing 13. These cans fall onto the fins 26, which are able to retain or guide each can without preventing its descent within the dispenser, but instead obstructing its free fall onto the wall 33, which could cause it to leave the dispenser. In this respect, the fins which support the can flex to allow it to fall smoothly downwards towards the wall 33, those fins then receiving the overlying can.

[0012] When the dispenser 11 contains a number of cans, or when the lower can rests on the support mem-

ber 33, the user can extract the desired drink from it through the aperture 34. By virtue of its own weight, the overlying can then automatically falls softly onto the member 33 ready for removal.

[0013] A particular embodiment of the invention has been described. Others are however possible (for example one in which the fins 26 are associated directly with the wall 16 of the housing 13; or one in which the member or shelf 33 is totally independent and separate from the housing 13 and positioned below but spaced from this latter, which in this case is constructed lowerly open and without the front aperture 34) and are to be considered as falling within the scope of this document.

Claims

1. A refrigerator comprising a cabinet (2) in which at least one preservation compartment (4) is provided, and a door (3) hinged to said cabinet (2) and arranged to close said compartment (4), said door (3) comprising a door liner (5) which when the door (3) is closed onto the cabinet (2) faces said compartment (4), said door liner (5) comprising at least one tray (8) for supporting food, and a plurality of support elements (10) for said tray (8) which enable it to be positioned at different heights on said door liner (5), characterised in that in this latter there is positioned a member (11) acting as a dispenser for drink or beverage containers (12) which is open at opposing ends (at 13A and 34) and is arranged to contain drink cans or bottles (12), below said member (11) there being provided a shelf (33) for supporting one of said drink or beverage containers (12) in such a manner as to enable it to be gripped by a user, said containers (12) being superposed within the dispenser member (11) and being able to move towards said shelf (33) when that container (12) positioned thereon is removed from it.
2. A refrigerator as claimed in claim 1, characterised in that the dispenser member (11) comprises lateral elements (14) arranged to cooperate with the support elements (10) provided on the door liner (5).
3. A refrigerator as claimed in claim 2, characterised in that the lateral elements (14) are associated with walls (15) positioned laterally to a central wall (16) of a housing (13) containing the apertures (13A and 34) for inserting and removing the drink containers (12) into and from the dispenser (11), said housing (13) supporting the shelf (33) for the drink container (12) to be removed from the dispenser (11).
4. A refrigerator as claimed in claim 3, characterised in that the container removal aperture (34) is provided in the central wall (16) of the housing (13), in proximity to the shelf (33).
5. A refrigerator as claimed in claim 1, characterised in that the dispenser member (11) comprises flexible inner elements (26) for retaining drink containers (12) and spacing them apart.
6. A refrigerator as claimed in claims 3 and 5, characterised in that the flexible inner elements (26) are associated with a preferably at least partly flexible member (23) removably coupled to the housing (13) provided with the aperture for removing the drink containers.
7. A refrigerator as claimed in claim 1, characterised in that the housing provided with the insertion aperture (13A) and removal aperture (34) for the drink containers (12) comprises a longitudinal window (17).
8. A refrigerator as claimed in claim 1, characterised in that the shelf (33) is separated from the dispenser housing (13), which is open at its top and bottom.
9. A refrigerator as claimed in claim 1, characterised in that the shelf (33) comprises a covering of soft material.
10. A dispenser member for drink containers (12), in particular cans, small bottles or cardboard containers, said member to be positioned in a refrigerator comprising a cabinet (2), and a door (3) hinged to it and arranged to close a preservation compartment (4) provided in the cabinet, said door comprising a door liner (5) provided with support elements (10) for one or more trays (8), said elements (10) being positioned at different heights on the door liner, said dispenser member (11) being characterised by comprising a housing (13) defining a containing compartment for said containers (12) and provided with an aperture (13A) for inserting said containers (12) into it and an aperture (34) for removing them from it, there being provided in correspondence with said removal aperture (34) a support element (33) for one of said containers (12).
11. A dispenser member as claimed in claim 10, characterised by lowerly comprising flexible support means (26) for the drink containers (12).
12. A dispenser member as claimed in claim 10, characterised by comprising a window (17) for visual access to the interior of its housing (13).

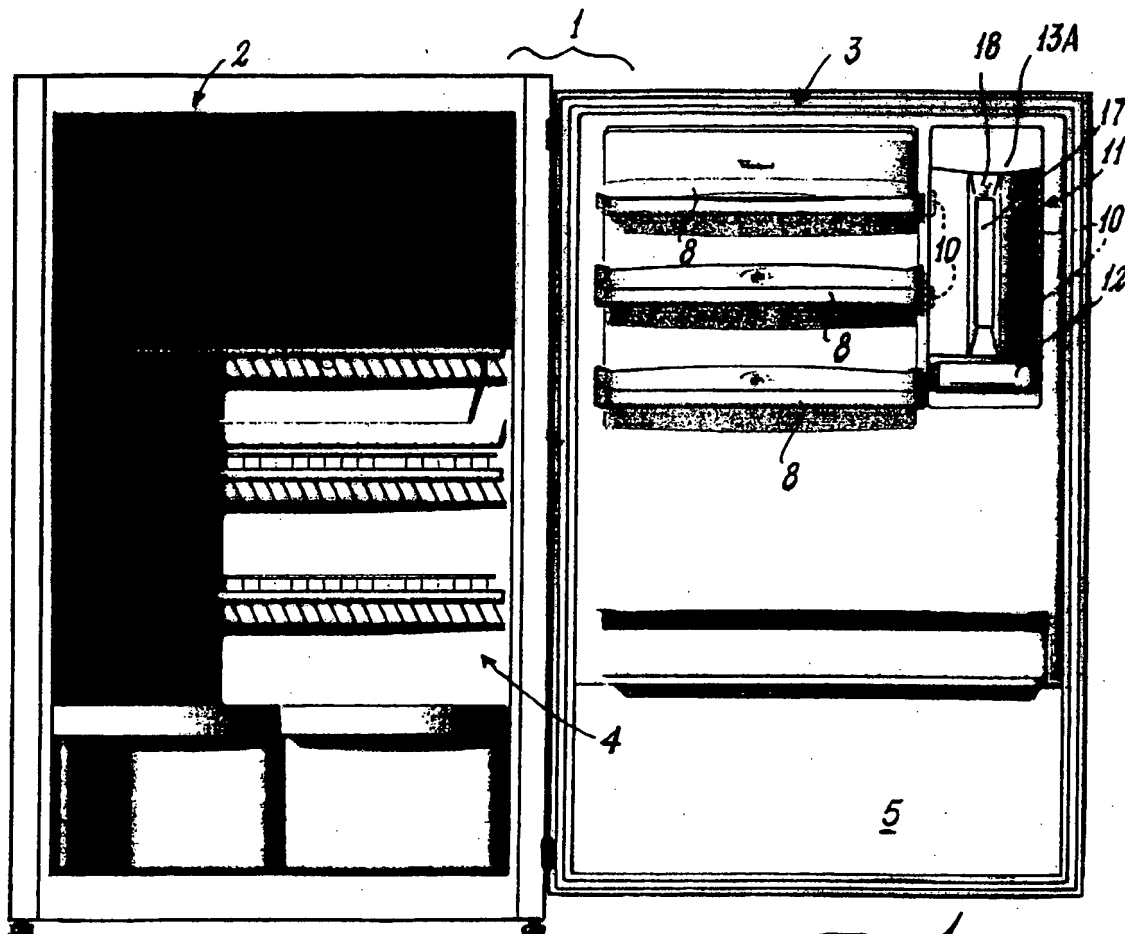
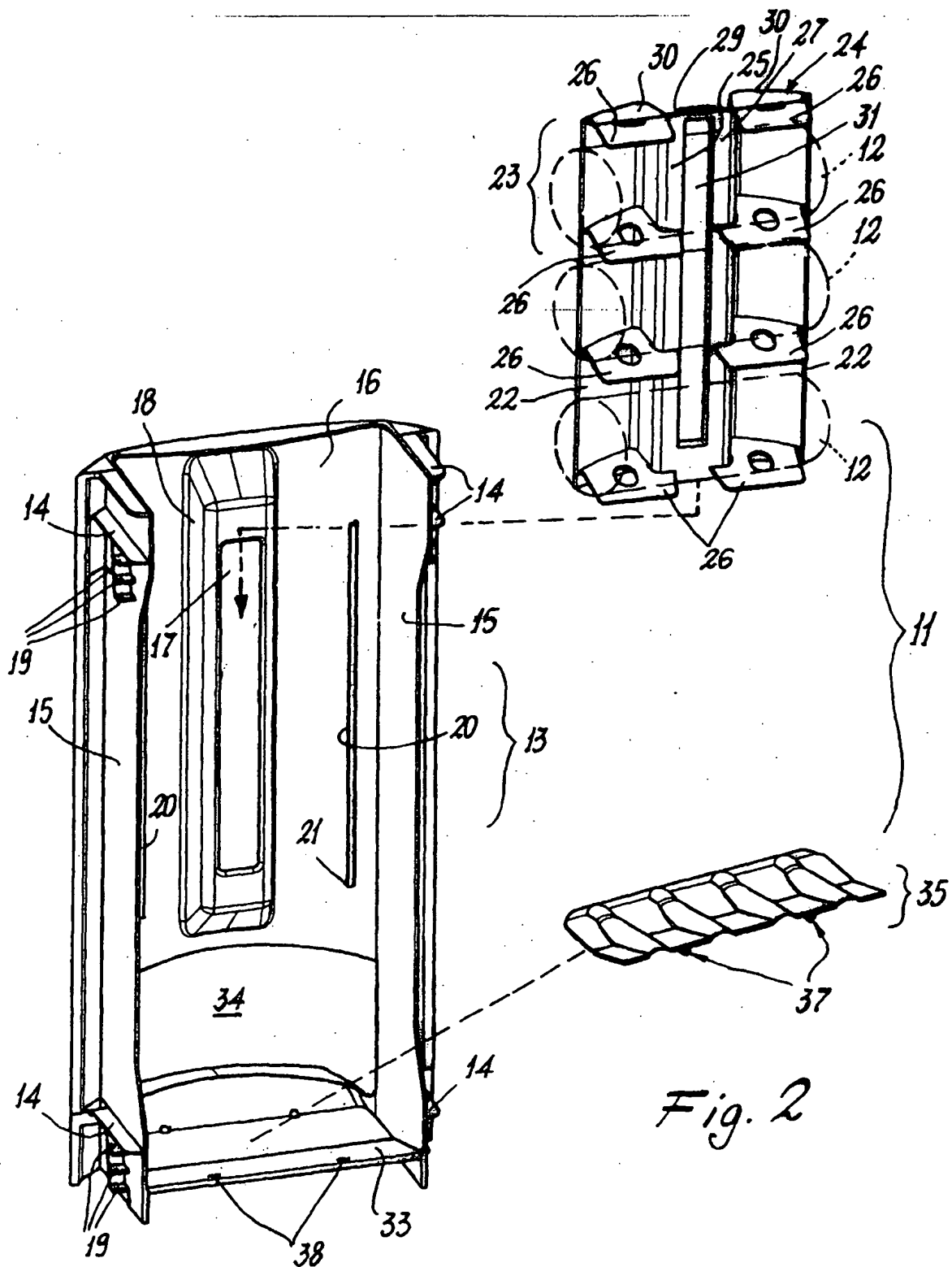
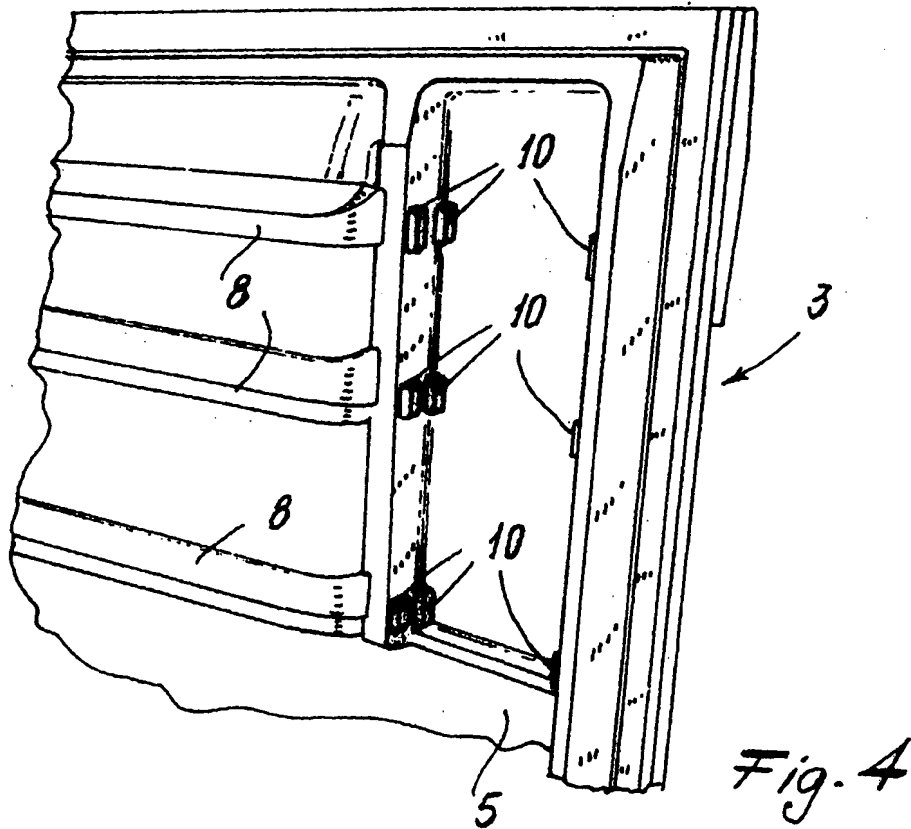
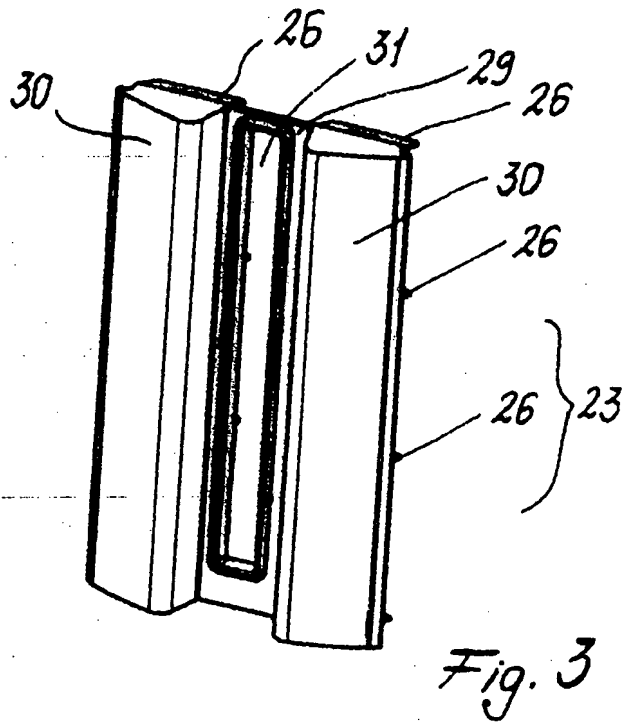
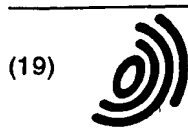


Fig. 1

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EUROPEAN SEARCH REPORT

Application Number
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| The present search report has been drawn up for all claims | | | |
| Place of search MUNICH | | Date of completion of the search 10 April 2002 | Examiner Zanotti, L |
| CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document | | | |

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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